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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOSEPH A. HINKLE and DAVID J. MADAJ

Appeal 2009-0159
Application 09/833,183
Technology Center 2600

Decided¹: February 17, 2009

Before JOSEPH F. RUGGIERO, ROBERT E. NAPPI, and
CARLA M. KRIVAK, *Administrative Patent Judges*.

KRIVAK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from a final rejection of
claims 1-13. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF CASE

Appellants' claimed invention is an audio distortion processing system and method. The system and method incrementally reduce and recover narrowband and wideband gains for controlling audio distortion (Abstract). If clipping is detected, once it desists, a gain recovery process is performed, whereby the wideband gain is initially recovered until reaching its original level and subsequently, the narrowband gain is recovered until reaching its original level (Abstract; ¶¶[0020]). Therefore, by initially reducing the narrowband gain, in the event of clipping, the audio signal change is less noticeable by listeners. Conversely, by initially recovering the wideband gain reduced by clipping, the audio distortion process remains less noticeable to listeners (¶[0021]).

Independent claim 1, reproduced below, is representative of the subject matter on appeal.

1. An audio distortion processing system comprising:

a first processing unit adapted to be in communication with an audio source wherein said first processing unit controls a plurality of parameters;

a plurality of inputs in communication with said first processing unit, said plurality of inputs respectively indicating values of said plurality of parameters;

a power amplifier in electrical communication with said first processing unit for receiving an output signal of said first processing unit, said power amplifier selectively generating a clipping signal, said power amplifier adapted to be in communication with at least one speaker;

a second processing unit in electrical communication with said power amplifier and said first processing unit for receiving said clipping signal from said power amplifier and sending control signals to said first processing unit; and

a plurality of inputs in communication with said second processing unit, said plurality of inputs respectively indicating values of said plurality of parameters;

wherein said control signals initiate an incremental reduction in a level of a first parameter of said plurality of parameters until one of either said clipping signal recedes or a reduction limit of said first parameter is achieved and then incremental reduction in a level of a second parameter of said plurality of parameters if a reduction limit of said first parameter is achieved and said clipping signal persists; and

an incremental recovery of an original level of said second parameter if said clipping signal is not detected and then an incremental recovery of an original level of said first parameter ensures if said original level of said second parameter is fully recovered and said clipping signal is not detected.

REFERENCES

Brewer	US 5,255,324	Oct. 19, 1993
Wassink	US 5,633,940	May 27, 1997

The Examiner rejected claims 1-13 under 35 U.S.C. § 103(a) based upon the teachings of Brewer and Wassink (Ans. 3).

Appellants contend that Brewer and Wassink, either alone or in combination, do not teach or suggest incrementally reducing a first parameter before a second parameter in the event of clipping *and* incrementally recovering an original level of the second parameter before

(emphasis added) incrementally recovering an original level of the first parameter (App. Br. 4; Reply Br. 2).²

ISSUES

Did Appellants establish the Examiner erred by finding that applying the recovering of the settings of Wassink, which can be increased in a reverse order to the order the settings have been reduced, to the audio distortion system of Brewer, would result in the present invention?

FINDINGS OF FACT

1. Appellants' invention allows for reducing noticeability/perceivability of audio distortion by initially reducing the narrowband gain and then initially recovering the wideband gain (Spec.¶[0021]; App. Br. 5).

2. Appellants' claims include sending control signals to a first processing unit. The control signals initiate an incremental reduction in a level of a first parameter until either a clipping signal recedes or a reduction limit of the first parameter is achieved. Then, incremental reduction in a level of a second parameter is performed if a reduction limit of the first parameter is achieved and a clipping signal persists (cl. 1; Fig. 3; ¶¶[0017]-[0018]).

3. An incremental recovery of an original level of the second parameter is started if the clipping signal is not detected. Then, an incremental recovery of an original level of the first parameter is started if

² We refer throughout this opinion to the Appeal Brief filed June 5, 2007, and the Reply Brief filed November 26, 2007.

the original level of the second parameter is fully recovered and the clipping signal is not detected (cl. 1; Fig. 4; ¶[0020]).

4. Brewer teaches voltage limiting an audio amplifier to avoid clipping distortion (col. 3, ll. 3-5). When clipping distortion exceeds the threshold, the microcontroller reduces the narrowband gain in predetermined steps after predetermined delays. If narrowband gain is reduced to a predetermined reference level and clipping distortion remains above a threshold, then wideband gain is reduced (col. 3, ll. 16-23). When clipping distortion falls below the threshold, the wideband gain is restored and then narrowband gain is restored (col. 3, ll. 23-28).

5. Wassink teaches an audio amplifier arrangement including a control circuit that includes a program for adjusting the volume and/or bass setting, and/or treble setting to reduce the signal strength of the audio signal amplified by an amplifier stage (col. 3, ll. 35-40).

6. Wassink teaches that when “transgressions of the threshold value are no longer detected” and “no overload has been detected, the volume setting or bass setting can be increased in a reverse order to the order in which the settings have been reduced” (col. 5, l. 66-col. 6, l. 5).

PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007).

An improvement in the art is obvious if “it is likely the product not of innovation but of ordinary skill and common sense.” *KSR* at 1742.

It is well settled that features not claimed may not be relied upon in support of patentability. *In re Self*, 671 F.2d 1344 (CCPA 1982). Additionally, claims in a patent application are to be given their broadest reasonable interpretation consistent with the specification during prosecution of a patent application (*In re Zletz*, 893 F.2d 319 (Fed. Cir. 1989)) and limitations from the specification will not be read into the claims (*Sjolund v. Musland*, 847 F.2d 1573 (Fed. Cir. 1988)).

“[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If the Examiner’s burden is met, the burden then shifts to the Appellants to overcome the *prima facie* case with argument and/or evidence. (*Id.*)

ANALYSIS

The Examiner rejected claims 1-13 under 35 U.S.C. § 103(a) as obvious over Brewer and Wassink. Appellants argue the rejection with respect to claim 1, claims 2-13 standing or falling therewith (App. Br. 6). Thus, the rejection is addressed with respect to representative claim 1.

The Examiner finds Brewer teaches all the features of claim 1 including incrementally reducing the level of the first parameter, then incrementally reducing the second parameter, and incrementally recovering the first and second parameters (Ans. 4-5). However, Brewer does not disclose recovering the first parameter after the second parameter is recovered and a clipping signal is not detected (Ans. 5), but Wassink teaches

once clipping is not detected volume and bass settings can be increased in a reverse order in which they were reduced (Ans. 5).

Appellants contend neither Brewer nor Wassink, alone or in combination, teach or suggest reducing the first parameter before the second parameter and recovering the second parameter before the first parameter (App. Br. 4; Reply Br. 2). This feature of the invention, Appellants assert, allows reduction in “noticability/perceivability [sic] of audio distortion reduction processes for listeners” (App. Br. 5; Reply Br. 2). Appellants further assert Brewer does not “appear to contemplate initial recovery of wideband gain” and Wassink is “not directed to *reducing* noticability [sic] of audio distortion” (App. Br. 5). Further, neither Wassink nor Brewer discloses or suggests “the claimed order would be in any way beneficial” (Reply Br. 2). Thus, there is no reason one of ordinary skill in the art would combine the references as proposed by the Examiner (*id.*).

Contrary to Appellants’ contentions, both Wassink and Brewer teach recovering the second parameter before the first parameter. Brewer teaches restoring the wideband gain before the narrowband gain (col. 3, ll. 23-28; FF 4) as does Wassink (col. 5, l. 66-col. 6, l. 5; FF 6). Even if, assuming *arguendo*, Brewer did not teach this feature of restoring the second parameter (wideband gain) before the first parameter (narrowband gain) Wassink does teach it is known to change the order of restoring the parameters. It is of no consequence that Wassink does not directly state a benefit from changing the order. Since both references are in the same field—they disclose digitally controlled audio amplifier arrangements in the field of audio signal processing—modifying Brewer to include this feature

would merely be an obvious improvement because “it is likely the product not of innovation but of ordinary skill and common sense.” *KSR supra*.

With respect to reducing noticeability of audio distortion, Appellants’ arguments are irrelevant as the claims are not directed to these features of Appellants’ invention. Further, limitations found in the specification will not be read into the claims and the feature of “reducing noticeability” is not found in the claims.

Accordingly, Appellants have not overcome the Examiner’s prima facie case of obviousness based upon the combination of Brewer and Wassink teaching and suggesting Appellants’ claim 1. Thus, the Examiner’s rejection of claims 1-13 as obvious over the combination of these references is sustained.

CONCLUSION

Appellants did not establish that the Examiner erred by rejecting claims 1-13 under 35 U.S.C. § 103(a).

DECISION

The Examiner’s decision rejecting claims 1-13 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

Appeal 2009-0159
Application 09/833,183

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